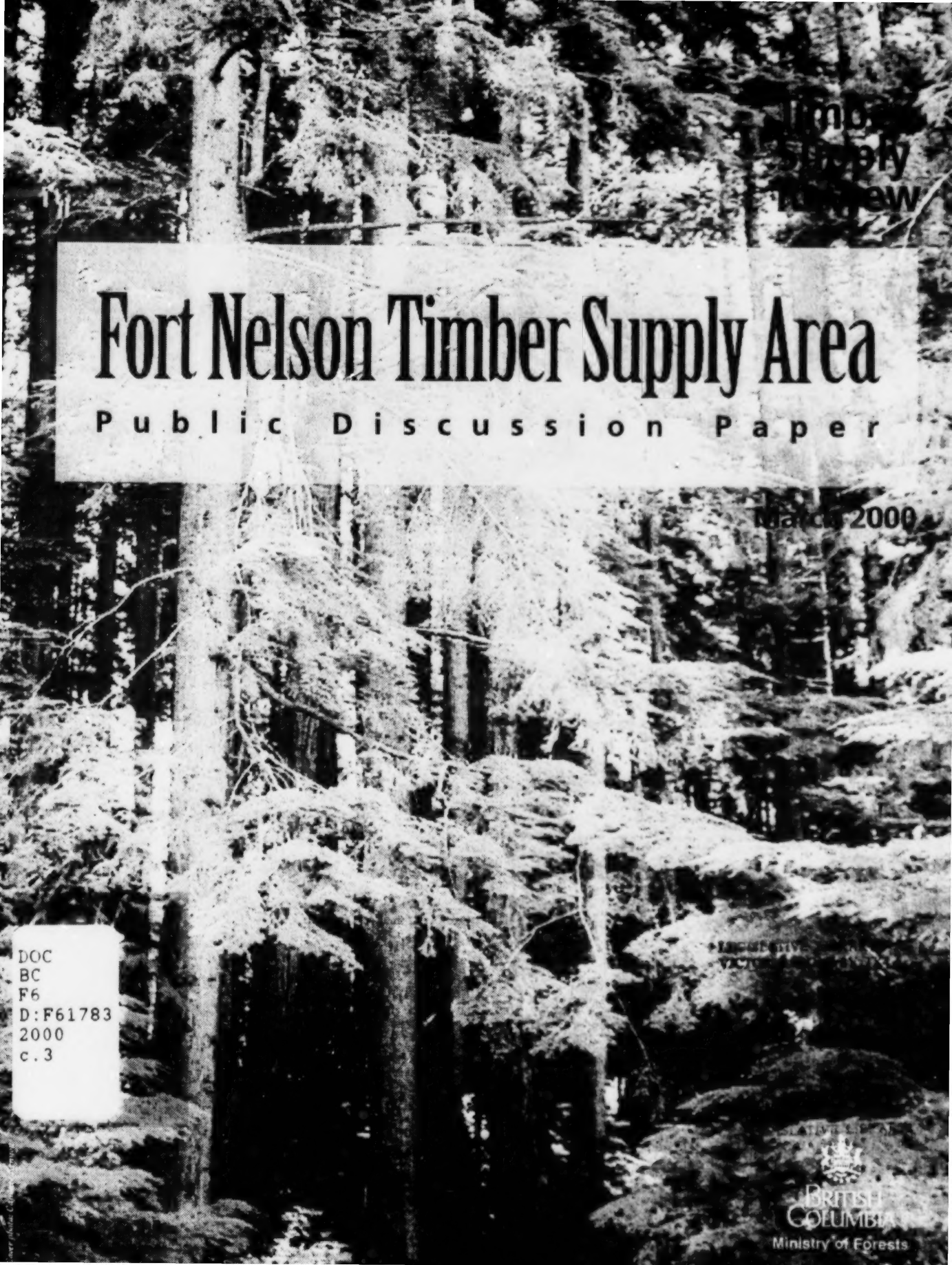

Fort Nelson Timber Supply Area

Public Discussion Paper

March 2000

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BRITISH COLUMBIA
Ministry of Forests

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Introduction

The British Columbia Forest Service is reviewing the timber supply for all timber supply areas* (TSAs) and tree farm licences (TFLs) in the province. This review examines the impacts of current forest management practices on the timber supply, economy, environment and social conditions of the local area and the province. Based on this review, if necessary, the chief forester may adjust the allowable annual cut (AAC) for the Fort Nelson TSA.

By law, the chief forester must review and set new AACs for all TSAs and TFLs every five years. The objectives of the Timber Supply Review are to:

- identify relevant economic, environmental and social information based on current forest management practices including their effects on the short- and long-term timber supply
- identify where improved information is required for future timber supply forecasts
- provide the chief forester with information to make any necessary adjustments to the AACs for the next five years

Timber Supply Review in the Fort Nelson Timber Supply Area

The *Fort Nelson TSA Data Package* and *Information Report* were released in July 1997. Following this, the documents were reviewed by licensees, First Nations, the public and government agencies.

The timber supply review program has been designed to take approximately 22 months for TSAs and 30 months for TFLs. However, due to the complexities of gathering data and assumptions for this timber supply analysis, the review has taken longer.

The BC Forest Service has now completed the *Fort Nelson TSA Analysis Report*, which is summarized in this discussion paper. The objectives of the pubic discussion paper are to provide British Columbians with an overview of the timber supply review and forecasts for the Fort Nelson TSA and to encourage them to provide comments during the 60-day public review period. Public comments will be accepted until May 15, 2000.

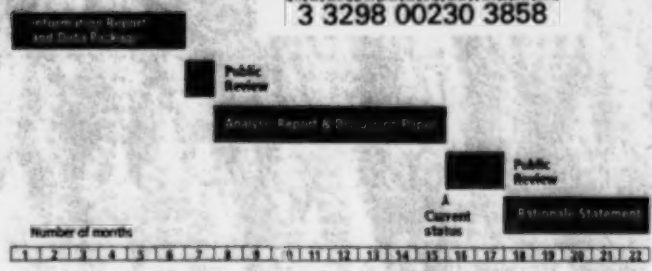

Public Review
Public Review
A Current status
Rationale Statement
Number of months
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

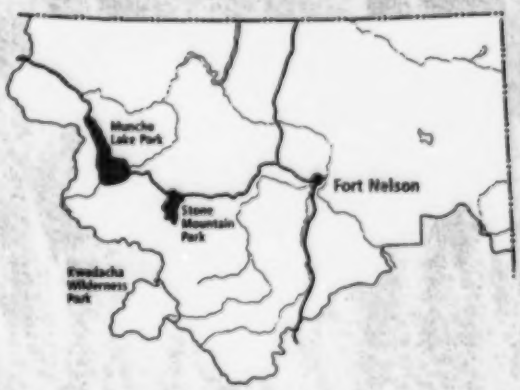
Figure 1
Review process for the Fort Nelson TSA

Before setting a new AAC, the chief forester will review all relevant reports and public input. The chief forester's determination will be outlined in a rationale statement, which along with the *Summary of Public Input*, will be available to the public.

Following the release of the AAC determination by the chief forester, the minister of forests will apportion the AAC to the various licenses and programs.

Description of the TSA

The Fort Nelson TSA is situated in the north-eastern corner of B.C. and is administered by the Fort Nelson Forest District in Fort Nelson. The TSA currently covers over eight million hectares and includes the communities of Fort Nelson, Prophet River, Toad River, and Muncho Lake.



Of the approximately 5,800 people in the Fort Nelson TSA, three-quarters live in the town of Fort Nelson (1996 census). From 1996 to 1999, the population grew by an estimated five per cent.

**A timber supply area is an integrated resource management unit established in accordance with section 7 of the Forest Act.*

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Due to a recent boundary change between the Fort Nelson TSA and the Cassiar TSA, about 1.66 million hectares will be added to the Fort Nelson TSA. The area added to the Fort Nelson TSA is remote and not expected to contribute to timber supply over the next several years. The impact to the Fort Nelson TSA timber supply, if any, will be examined in the next timber supply review.

Forest land resources

Numerous natural resources are associated with the forest land base in the Fort Nelson TSA. These include forest products, significant wildlife habitat, and recreation and tourism amenities. Only a small portion (eleven per cent) of the total Fort Nelson TSA is considered available for timber harvesting.

The TSA contains vast tracts of relatively undeveloped land that support abundant, diverse and internationally significant wildlife populations. Large mammals such as moose, elk, Stone's sheep, and black and grizzly bears are common, as are smaller furbearers. Local residents make use of the area for all-season recreation. The Alaska Highway traverses the TSA, bringing tourists to the area to enjoy the numerous parks and protected areas, including the newly-created Muskwa-Kechika Management Area.

Land use planning

In recognition of the diversity of the area and its values and resource uses, in February 1995, a land and resource management planning process was initiated.

In June 1999, as part of the implementation of the approved *Fort Nelson Land and Resource Management Plan*, eleven new parks totaling 842,271 hectares, were designated. By April 2000, it is anticipated that an additional eleven areas will be designated as either protected areas or ecological reserves.

The impacts to timber supply from the eleven designated parks have been examined in the timber supply analysis. Also, forest management practices and potential new parks as a result of the plan will be considered in determining the AAC.

Socio-economic profile

Regional economy

The economy of Fort Nelson TSA's industrial sector is dominated by forestry. Logging, forestry services and forest products manufacturing account for 30 per cent of the total experienced labour force (see Figure 2), an increase of 145 per cent from 1991 to 1996. However, growth in the forest industry has slowed since 1996, particularly with the suspension of operations at the Canadian Chopstick Manufacturing Co. Ltd. plant in 1997. Since then, Slocan Forest Products Ltd. and its subsidiary Tackama Forest Products are the only major wood processors currently operating in the TSA. They operate a sawmill, oriented-strand board mill and veneer/plywood mill.

There are also a number of smaller mills operating in the TSA. They often utilize the wood not processed by the larger mills.

Fort Nelson's central role as a regional service centre is reflected in the fact that 54 per cent of the labour force is employed in the service sector (business services, TCU — transportation, communication and utilities —, trade, construction, accommodation, and other). The public sector is small compared to other areas of the province. The oil and gas sector (part of mining, other manufacturing and TCU) is the second largest industrial sector, employing 250 to 450 local residents and an additional 1,000 workers from outside the TSA. Tourism (part of accommodation, trade and business services) is also an important component of the economy, and consists of tourists travelling the Alaska Highway and visitors drawn to the area's guide outfitting and large-game hunting, and back country recreation opportunities.

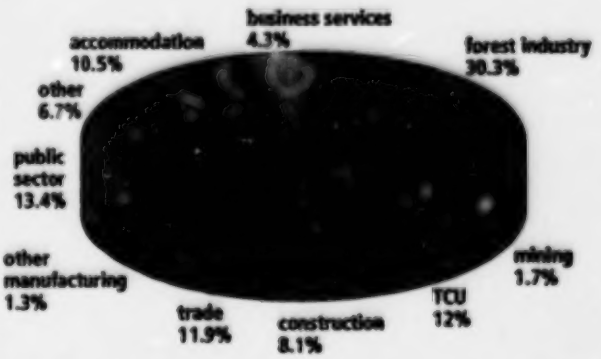

***Figure 2** Employment by sector for Fort Nelson TSA*

Source: 1996 Census of Canada

Notes: Business services consist of finance, insurance, real estate and other business services; TCU consists of transportation, communications, and utilities. Other consists of personal services.

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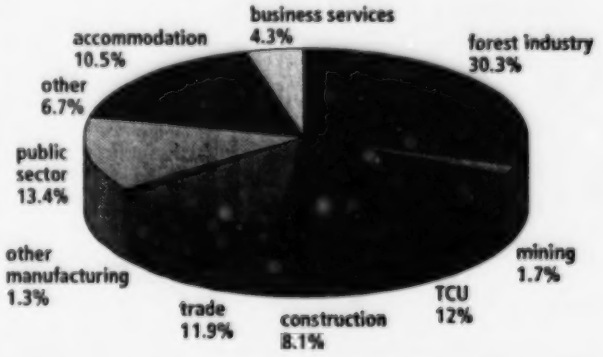

Figure 2 ***Employment by sector for Fort Nelson TSA***

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Table 1 illustrates the potential contribution of the forest industry associated with the Fort Nelson TSA to both the regional and provincial economies. Figures in this table are based on the 1996 to 1998 average annual harvest of 1.37 million cubic metres, and reflect the impact of the suspended operations of the chopstick manufacturing plant and the opening of Slocan's oriented-strand board mill.

	TSA	Provincial
Direct employment (person years)	787	1104
Total employment (person years)	1146	2400
Total employment income ($1998 millions per year)	50.2	95
Provincial government revenues ($1998 millions per year)	n.a.	36.2

Table 1. *Summary of local and provincial economic impacts for the Fort Nelson TSA forest sector*

Note: Employment estimates are reported in person-years based on average 1996 to 1998 employment levels and the 1996 to 1998 average annual harvest of 1.37 million cubic metres. Provincial government revenues are estimated on the same basis.

Current allowable annual cut

On February 7, 1994, the chief forester determined the AAC for the Fort Nelson TSA to be 1.5 million cubic metres (effective January 1, 1995), an increase from the previous level of 972,000 cubic metres. This harvest is partitioned into 600,000 cubic metres per year for coniferous-leading forests and 900,000 cubic metres per year for deciduous-leading (broad leaf) forests.

Timber supply forecasts

A timber supply computer model is used to project several possible timber supply forecasts for the next 250 years. One of these forecasts is the base case forecast, which illustrates the effect of current forest management on timber supply. The base case is not an AAC recommendation, but rather one of many sources of information the chief forester will consider when setting the AAC. The base case forecast presented in this report is for discussion and comparative purposes and, due to areas of uncertainty, the AAC determined by the chief forester may be greater or less than the base case forecast.

The 2000 Fort Nelson TSA Timber Supply Analysis reports a base case forecast (including deciduous and coniferous forests) of 2,276,000 cubic metres per year. As shown in Figure 4, the harvest levels for coniferous- and deciduous-leading forests are reported separately due to the existing partition that reflects their distinctly different characteristics.

The base case forecast for coniferous-leading forests indicates that the harvest level could be increased to 1,376,000 cubic metres per year for the next 250 years, from the current allowable harvest level of 600,000 cubic metres per year.

The base case forecast for deciduous-leading forests indicates the current allowable harvest level of 900,000 cubic metres per year could be maintained for the next 250 years.

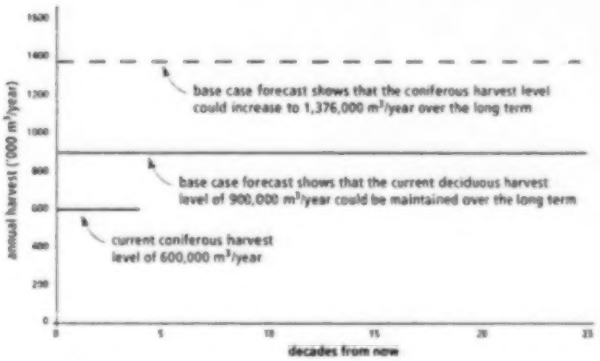

Figure 4. *Base case timber supply forecast for the Fort Nelson TSA, 2000*

The previous 1992 timber supply analysis also reported opportunities for future increases to timber supply. In the 2000 timber supply analysis, the harvest level increase is mainly due to the increase in the coniferous-leading land base now considered suitable for timber harvesting. The total timber harvesting land base increased from about 707,900 hectares to approximately 925,000 hectares.

In particular, the timber harvesting land base covered with coniferous-leading forests is over twice the amount of area considered as the basis for the 1994 AAC decision. The larger coniferous land base is attributed to more area being considered economic to harvest from coniferous forests that have a mix of deciduous trees, and from areas with lower site productivity. However, there is some uncertainty about this land base increase as discussed below, under sensitivity analyses.

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	TSA	Provincial
Direct employment (person years)	787	1104
Total employment (person years)	1146	2400
Total employment income	50.2	95
Provincial government revenues	n.a.	35.2

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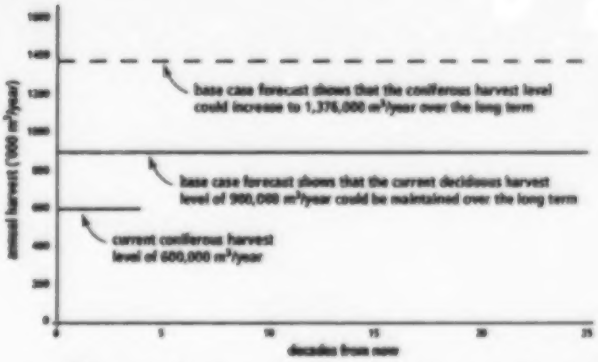
annual harvest (1000 m³/year)
base case forecast shows that the coniferous harvest level could increase to 1,376,000 m³/year over the long term
base case forecast shows that the current deciduous harvest level of 900,000 m³/year could be maintained over the long term
current coniferous harvest level of 600,000 m³/year
decades from now

Figure 4. *Base case timber supply forecast for the Fort Nelson TSA, 2000*

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In particular, the timber harvesting land base covered with coniferous-leading forests is over twice the amount of area considered as the basis for the 1994 AAC decision. The larger coniferous land base is attributed to more area being considered economic to harvest from coniferous forests that have a mix of deciduous trees, and from areas with lower site productivity. However, there is some uncertainty about this land base increase as discussed below, under sensitivity analyses.

Sensitivity analyses: examining uncertainty

Since forests are complex and constantly changing, timber supply analysts assess how their timber supply forecast results might be affected by uncertainties in the inventory information and management practices. These uncertainties are examined in sensitivity analyses which the chief forester will consider in determining an AAC. The sensitivity analyses are useful for assessing how any changes in information or uncertainties and risks might affect timber supply.

In the Fort Nelson TSA, a number of sensitivity analyses were conducted to examine the stability of the timber supply. The key sensitivity analyses examine the uncertainty regarding the size of the coniferous timber harvesting land base, as discussed below. For a complete listing, please refer to the *2000 Fort Nelson TSA Analysis Report.*

Uncertainty in the size of the timber harvesting land base

Uncertainty regarding the size of the timber harvesting land base has a large effect on projected harvests over the next 250 years. For this timber supply analysis, two important factors in defining the size of the timber harvesting land base involved setting minimum site productivity thresholds and defining merchantable species. When reviewing actual harvesting practices and the forest inventory, there is some uncertainty about these factors.

Forested areas that were below the site productivity thresholds defined for each species were considered unsuitable for timber harvesting and excluded from contributing to the timber harvesting land base. However, if the thresholds were increased or decreased, the coniferous land base could be as much as 17 per cent smaller to 31 per cent larger, while the deciduous land base could be as much as 34 per cent smaller to 21 per cent larger than assumed in the base case. Figures 5 and 6 show the results of sensitivity analyses that reflect the range of impacts to timber supply due to uncertainty regarding the upper and lower range of the site productivity thresholds.

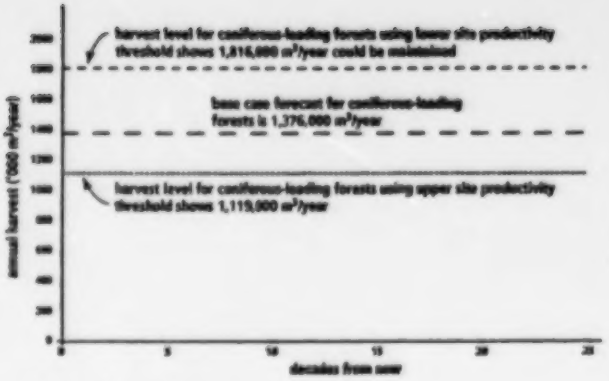
harvest level for coniferous-leading forests using lower site productivity threshold shows 1,816,000 m³/year could be maintained
base case forecast for coniferous-leading forests is 1,376,000 m³/year
harvest level for coniferous-leading forests using upper site productivity threshold shows 1,119,000 m³/year
annual harvest (000 m³/year)
decades from now

Figure 5.
Uncertainty in the size of the coniferous land base due to site productivity thresholds, 2000

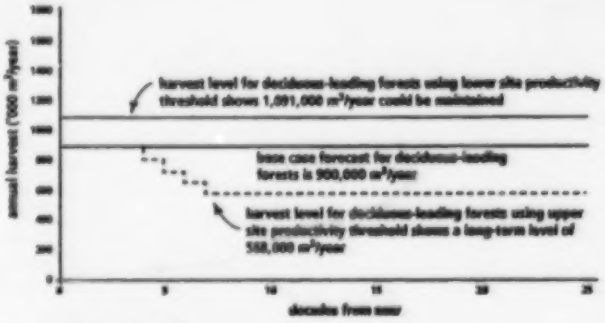
harvest level for deciduous-leading forests using lower site productivity threshold shows 1,091,000 m³/year could be maintained
base case forecast for deciduous-leading forests is 900,000 m³/year
harvest level for deciduous-leading forests using upper site productivity threshold shows a long-term level of 588,000 m³/year
annual harvest (000 m³/year)
decades from now

Figure 6.
Uncertainty in the size of the deciduous land base due to site productivity thresholds, 2000

In addition to the site productivity thresholds, there is some uncertainty about the appropriate contribution of various forested areas covered with different tree species. For the Fort Nelson TSA, the merchantability of a forested area was determined based on the minimum timber volume per hectare typically harvested. As deciduous and coniferous trees have different management requirements and merchantability criteria, complexities arise when considering the appropriate contribution from forests that are equally mixed with deciduous and coniferous trees.

A total of 183,500 hectares of mixed wood stands are included in the coniferous land base, and 127,000 hectares are included in the deciduous land base. However, due to a limited history of harvesting operations within mixed stands there is some uncertainty about their appropriate management and their overall contribution to the timber harvesting land base. This uncertainty is compounded by the broad grouping of forest types in the inventory.

A sensitivity analysis shows the impact to timber supply if all the mixed wood stands were removed from contributing to the timber harvesting land base. Figure 7 illustrates that the coniferous harvest level would be approximately one million cubic metres per year, or about 27 per cent lower than the base case; the deciduous harvest level would stay the same for 30 years and then gradually decrease to about 600,000 cubic metres per year in the long term.

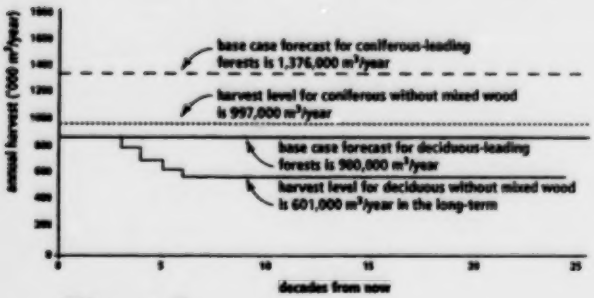
annual harvest (000 m³/year)
base case forecast for coniferous-leading forests is 1,376,000 m³/year
harvest level for coniferous without mixed wood is 997,000 m³/year
base case forecast for deciduous-leading forests is 980,000 m³/year
harvest level for deciduous without mixed wood is 601,000 m³/year in the long-term
decades from now

Figure 7.

Uncertainty in the size of the timber harvesting land base due to mixed wood stands, 2000

Another important issue is the uncertainty in defining the characteristics and merchantability of black spruce forests. Due to the broad grouping of forest types in the inventory, black spruce forests located on sites that range from good to very poor productivity and often mixed with other tree species, are typed together. Harvesting of these black spruce-leading stands has not consistently occurred. A total of 248,580 hectares of black spruce-leading stands that are potentially merchantable, were not included in the timber harvesting land base. However, if this area were included, the coniferous base case could increase by a further 30 per cent. It is likely that some of the black spruce-leading stands can be harvested but more information is required before the appropriate amount of harvestable area can be estimated and included in the timber supply forecasts.

Generally forest management activities have occurred over only a relatively small portion of the forested area in the Fort Nelson TSA compared to other parts of the province. Due to the short history of forest management in the TSA, the forest is broadly classified. A joint project — between BC Forest Service and Slocan Forest Products — is underway to improve the forest inventory classification and mapping, and will be considered in future timber supply reviews.

In summary, defining how much area should realistically contribute to the timber supply—after reflecting environmental objectives—involves complex considerations and projections about future economics and technology. These factors will be thoroughly considered in the upcoming AAC determination along with public input on this matter.

Implications of changes in the AAC

Environmental Implications

Current forest management follows the standards set in the Forest Practices Code and several strategies described in the Fort Nelson Land and Resource Management Plan. These standards and strategies are applied to manage for a range of critical biodiversity and wildlife values. In the Fort Nelson TSA, about half of the land base is considered productive forest. About 78 per cent of the productive forest in the TSA (89 per cent of the total area) is not considered available for timber harvesting and will provide for many environmental values. Forested area both in and outside of the timber harvesting land base will aid in the maintenance of critical forest habitats for many species.

First Nations Implications

The Fort Nelson TSA is covered by Treaty 8. The signatories to the treaty that have traditional territory in the TSA are the Fort Nelson First Nation, the Dene Tsaa Tse K'Nai First Nation (from Prophet River) and the Dena Tha' First Nation (from Assumption, Alberta). In addition, the Kaska-Dena First Nation has traditional territory in the TSA.

Higher harvest levels may lead to more economic opportunities for First Nations through involvement in the forest industry. The specific impacts that First Nations communities could experience would depend on what role they choose to take, and their geographic proximity to forest harvesting and manufacturing activities.

To address potential impacts to archaeological resources from forest management activities, an archaeological overview assessment and archaeological potential mapping have been completed for the entire TSA. Also traditional use studies are ongoing. Information gathered from these studies is considered in the Timber Supply Review.

Community Implications

The implication of changes in the AAC for local communities is an important consideration in the Timber Supply Review. The timber supply forecasts indicate a potential to increase the harvest level in the Fort Nelson TSA, which has many implications for local communities.

The current AAC of 1.5 million cubic metres can support approximately 855 person-years of direct employment in the TSA. The base case harvest level of 2,276,000 cubic metres per year could support a total of approximately 1,128 person-years, which includes 800 processing person-years. However, the maximum employment that can be supported at the existing mills is approximately 650 person-years of full-time employment. If harvesting activity were to increase, additional milling capacity would have to be built in the TSA or the wood could be transported outside the TSA for processing. Either option depends on the forest industry's ability to profitably harvest and mill the timber.

Assuming full utilization of the timber supply as forecast in the base case, the population could increase by 15 per cent, in addition to the growth already experienced in the region. If this growth is concentrated in one area then the development pressures and demand for public services could be substantial, and beyond the capacity of the current infrastructure.

Your input is needed

Establishing the AAC is an important decision that requires well-informed and thoughtful public input. Feedback is welcomed on any aspect of this discussion paper, the *Fort Nelson TSA Analysis Report* and other issues related to the timber supply in the Fort Nelson TSA. Forest Service staff would be pleased to discuss questions or concerns you may have that would help you prepare your response. Please mail your comments to the forest district manager at the address below. Your comments will be accepted until May 15, 2000.

You may identify yourself on the response if you wish. If you do, you are reminded that responses will be subject to the *Freedom of Information and Protection of Privacy Act* and may be made public. If the responses are requested, personal identifiers will be removed before the responses are released.

A summary of public comments will be attached to the AAC rationale and will be available from the district office when the chief forester's AAC determination is announced.

For more information contact and/or mail your comments to:

District Manager
BC Forest Service
Fort Nelson Forest District
RR#1, Mile 301, Alaska Highway
Fort Nelson, BC V0C 1R0
Phone: (250) 774-5511, Fax: (250) 774-3704

Or electronically mail to
Stephen.Duda@gems8.gov.bc.ca

Or visit our website at http://www.for.gov.bc.ca/tsb

Background Information Regarding TSR

The Chief Forester's Responsibility

Determining the Allowable Annual Cuts (AACs) for public forest lands in British Columbia is the responsibility of the province's chief forester. Section 8 of the *Forest Act* requires the chief forester to consider the following factors:

1. The rate of timber production that may be sustained from the area, taking into account:
   - the composition of the forest and its expected rate of growth
   - the time in which the forest will become re-established
   - silviculture treatments, including reforestation
   - standards of timber utilization
   - constraints on the amount of timber that may be produced due to use of the forest for other purposes.
2. The short- and long-term implications to the province of alternative rates of timber harvesting from the area.
3. The nature, production capabilities and timber requirements of established and proposed processing facilities.
4. The economic and social objectives of the Crown for the area, region and province—as expressed by the minister of forests.
5. Abnormal insect or disease infestations, and major salvage programs planned for the timber on the area.

Some of these factors can be measured and analyzed—others cannot. Ultimately, the chief forester's determination is an independent professional judgment based on the best available information. By law, the chief forester is independent of the political process, and is not directed by the minister of forests when determining AACs. In these determinations, the chief forester considers relevant information from all sources.

Why the current AAC may be lower than the long-term harvest level

In a few areas of the province, AACs have been set below the long-term harvest level.

This has generally occurred in areas with a limited harvesting history in the available range types, and some associated uncertainty in the forest inventory.

In these circumstances, the chief forester takes a cautious approach when examining potential harvest level increases. In considering an increase, important factors to consider are the likelihood of future decreases and the level of uncertainty regarding forest management information for the area.

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